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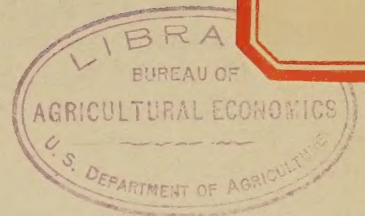
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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS
WASHINGTON

TAKING STATISTICS HOME TO THE FARMER

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(Prepared for discussion at a conference of the Extension Directors of the Eastern States, in New York, February 24-26, 1925.)

In his address at Chicago before the International Livestock Exposition, President Coolidge said:

"Inasmuch as orderly production is a necessary preliminary to orderly marketing, the well-informed farmer must keep himself posted months in advance concerning the probable production of various kinds of livestock during the coming season, as well as concerning the requirements of the market."

The idea that information concerning the future, both as to supply and demand, is essential to orderly and well-balanced production, as expressed by the President, is in line with the position which has been taken by many of the best trained agricultural leaders of the country. No longer are they willing to concede that in agricultural affairs the old doctrine of "laissez faire" should prevail. They believe that when the occasion arises something definite and concrete can and should be done to bring about better balanced production, rather than to continue the old policy of letting things drift, in the expectation that they will eventually work themselves out -- as they no doubt will -- even though during the adjustment period thousands of farmers are impoverished and ruined. They believe that it is very properly one of the functions of those agencies, both federal and state, which have been created for the advancement of agriculture, to help the farmer in the solution of his economic difficulties, as well as his biological problems. Both are essential to a well-balanced agriculture.

The possibility of keeping the great industrial and mercantile machine of this country more nearly in the middle of the road and at a more uniform speed by the use of various kinds of brakes and accelerators, is we believe, generally recognized. Many persons and organizations are now engaged in the work of forecasting future business conditions. The Federal Government itself issues a weekly survey of business, and other publications, which give the basic facts with reference to business conditions, such as car loadings, unfilled orders, stocks, etc. As the fundamental causes of business prosperity and depression are coming to be better understood, the future trend of business is being anticipated with increasing accuracy. The very fact that future conditions are being anticipated tends to prevent sharp changes occurring and flattens out some of the sharp curves of the business cycle.

Agriculture, to a greater degree than in almost any other line of business, needs to anticipate the future if those who are engaged in it are to enjoy the greatest measure of prosperity. The turn-over for most farm commodities is an annual affair. The farmer once having planted his crops or bred his livestock is practically powerless so far as doing anything to adjust production to demand is concerned. The only thing left for

him to do is to change the time and manner in which he will market his products. This means that the adjustment of production to be effective must begin before the crops are in the ground or the animals are bred. To do so intelligently, requires knowledge of the conditions that are likely to prevail when the products are ready for market.

How can the individual farmer post himself concerning these matters? Comparatively few have access to the necessary information and fewer still possess the requisite economic and business training for the correct analysis of the facts they may be able to secure. Unless, therefore, the average farmer can look to the various agencies working for the improvement of agriculture for guidance, there is danger that in periods of abnormal prices, production will get badly out of line.

A vast amount of statistical data of various kinds relating to agriculture is now being accumulated from various sources and many economists believe that it is possible by careful study and analysis of existing facts to throw a great deal of light on the future trend of production and prices; and, furthermore, that these forecasts, when properly understood and used, will go far to soften the effect of, if not entirely avoid, some of the serious disasters which have played havoc with agriculture in the past.

Cause and effect are fundamental in the economic world, as well as in the physical world. The effect of economic causes are even more difficult to determine, largely because of the difficulty of carrying out laboratory experiments in economics in the same way that experiments in physics can be carried out. However, with the improvements that are constantly made in the science of statistics, especially in its application to economic data, some rather remarkable results are being secured and the field is a very promising one.

It is the working out of these various causes and effects that gives us our business cycle, and the price cycles for farm products. For most farm commodities there apparently is a rather definite price cycle, aside from the seasonal one, or in other words, a period of high prices usually followed by a period of low prices, which in turn is followed by a period of high prices. The length of the cycle varies with the commodity. The causes of these cycles are several, both the supply and demand factors playing an important part, but in the case of many farm commodities cyclic price fluctuations are greatly accentuated by the natural reaction of the farmer to high and low prices. In other words, if prices are high at the time farmers are planting their crops or breeding their livestock, the general tendency of many is to increase their planting or breeding. If prices are low at the time they are planting or breeding, many are likely to curtail their operations, losing sight of the fact that the price situation prevailing at the time of planting is unlikely to continue until the crop is marketed.

As a result, in many instances, particularly with crops like potatoes, that cannot be carried over into the next season, by the time the farmers' crops are ready for market if a large acreage has been planted, based on high prices received for the previous year's crop, the supply is more than the market will take at a profitable price. If, therefore, through

a careful analysis of the situation the farmer can obtain some idea as to the future trend of prices, as well as information as to the intentions of other farmers with respect to planting and breeding, it places him in position to adjust his planting and breeding operations in such a way as to bring about a more stabilized production. Such stabilization would tend to smooth out to a large extent the hills and valleys in production and prices, thereby avoiding serious losses to himself and to the country at large which are caused by violent changes. With a proper adjustment of production to market demand, the total return to farmers as a whole would no doubt be considerably larger, or at least better distributed, than where we have a period of very high prices followed by an over-production and low prices. It is not likely that the ultimate consumer would pay any more, in fact he would probably pay less. In periods of abnormally high prices, many farmers have little to sell, so that comparatively few are really benefitted, while in periods of very low prices, the returns are not sufficient to pay the costs of production.

During a period of normal or subnormal prices for a commodity, the per-capita consumption is generally increased. For example, people acquire the habit of using more butter. When a period of full to over-supply is followed by an under-supply and much higher prices for butter, many people use substitutes, and the dairyman loses a part of his potential market. In the case of meats, where abnormally high prices have caused a substitution of other products, it frequently takes a considerable period of very low prices to restore the per-capita consumption to normal. This has a tendency to depress prices still further. High consumptive demand is like the "good will" in a business, in that it is a valuable asset to the industry.

To the classical economist, who still clings to the "laissez faire" doctrine, what I have said probably sounds like heresy, and not long ago one of them expressed to me considerable skepticism as to the practicability of influencing production by means of forecasts, because, as he said, the rain and the sunshine cannot be controlled. It is recognized, of course, that while it is impossible to tell very far in advance exactly what the actual yield per acre of the various crops will be, the other, and for most crops, the equally important factor, namely acreage, is subject to the farmers' control. Furthermore, it is possible from past experience to tell a great deal as to what is likely to happen, and with many crops, for a country as large as the United States, with its varying types of soil and wide range of climatic conditions, the change in acreage is probably quite as important as the change in yield. The total production from year to year does not vary as much as some people might think, and from a World standpoint there is even less variation. In the case of livestock, weather factors have only an indirect influence.

The time has come when, for many products, the American farmer must not think in terms of domestic production, but in terms of World production. This is true in the case of wheat, pork, wool, sugar, flax, peanuts, and many other commodities. In other words, the prices the American farmer receives are determined to a large extent by World production rather than by domestic production. This makes it important that we have as much information as possible concerning foreign production and marketable surpluses. Much progress has been made in the last two or three years in developing avenues and means for keeping in touch with the foreign situation.

In this period of high protective tariff, it is extremely important from the price standpoint, if farmers are to obtain any benefit from the tariff, that they keep the production of those products which meet keen competition from foreign countries, slightly below the quantity that will be needed for domestic consumption. Spring wheat is a good example of a commodity of this kind. Ordinarily between 200,000,000 and 225,000,000 bushels are required for domestic consumption. When more than this is produced and there is a normal winter wheat production, it means no premium for spring wheat, and that American spring wheat is on a competitive basis with Canadian wheat in European markets. Flax and barley are other crops of this kind. With crops like cotton, however, of which the United States is by far the most important producing country in the World, and must export a large part of the crop, the question of tariff is relatively unimportant. In the case of sugar and wool of which we produce very much less than the domestic requirements, domestic producers are able to obtain the full benefit of the tariff. These facts must be understood by the farmer. The big problem is how to help him to make effective use of them.

Prior to a few years ago, the idea of attempting to forecast the trend of agricultural production and prices, or furnish information to the farmers that would help them intelligently to plan their planting and breeding operations, was almost unheard of and very little systematic work was done to that end. Today, such work is becoming one of the most important phases of the work of the Bureau of Agricultural Economics, and the corps of statisticians and economists of the Bureau is devoting a great deal of time and energy to the solution of the many problems which are arising in the attempt to throw light on the future trends of agriculture.

A brief description of some of the work which the Bureau of Agricultural Economics is doing in the field of forecasting may be interesting. You are all familiar with the work done in the past in the forecasting, during the growing season, of the probable production of crops. Monthly reports on the condition of growing crops were started sixty-two years ago at the urgent request of farmers in order that they might have some indication of the production before crops were harvested and marketed, as well as immediately following harvest, which would enable them to make intelligent decisions as when to market; that is, whether to hold the crop or sell it immediately following harvest. The actual forecasting of production in a quantitative way was begun in 1912. The purpose of this work is to put the farmers on an equal footing with the buyers of their products.

In view of the fact that probably a relatively small percentage of the farmers of the country have made a practice of studying the crop reports, the indirect value of these reports has probably been much greater than the direct. By preventing the issuance of, and minimizing the effect of, false and misleading reports by private agencies, they have protected the farmer. Increased certainty of supplies stabilizes prices and reduces the speculative margins usually exacted where uncertainty exists. The crop reports aid in reducing uncertainty, and therefore the speculative margins. They aid the farmers indirectly by enabling transportation companies to furnish a proper supply of cars. They aid in the

better distribution of farm equipment and supplies, as well as in the better financing of crop movements.

While it is probable that farmers have not made the direct use of these reports in the past that they should have, there is no reason why such a state of affairs should continue to exist, especially in view of the agencies which are now available, such as the Extension Service, for bringing home directly to the farmer the facts that he should know in order to plan intelligently. There is strong evidence that an increasing direct use is being made of these reports.

As an example of how these reports may be used directly by the farmers, let us consider the potato reports. When the forecast early in the season shows that a large late crop is in prospect, it is important that those sections of the country which produce the early potatoes, such as the Carolinas, Virginia and New Jersey, shall dispose of the early crop as soon as possible to avoid competition with the crop which will be produced in the late-producing States, like Maine, New York and Michigan. If, on the other hand, a short late crop is forecast, it permits the producers of early potatoes to hold them for better prices, or even to augment the total supply by delayed harvesting. A study of potato prices over a series of years indicates that when the crop is below a certain amount, there is usually a steady rise in prices during the season, but that when the crop exceeds a certain amount there is generally a decline in prices throughout the year. These facts put the potato farmer in position to market his crop intelligently. Another use of potato reports is in enabling the potato producers of the extreme southern States, who produce for the early market, and thereby compete with the old crop, to adjust their planting in view of the stocks of late potatoes still on hand in the spring and early summer. In this respect, the potato reports are of great value to the southern planters.

Many other specific instances of the use of crop reports might be given. Few people realize the extent of the crop and livestock reporting work, the scope and accuracy of which is constantly being increased. These reports now cover seventy-four crops and all classes of livestock, and are distributed to the country through many channels. The statistics of crop and livestock movements, storage stocks, livestock slaughterings, etc., collected as a by-product of the market news and inspection services are continually growing in importance and value.

Important as regular crop forecasting and estimating is, some of the newer lines of work of the Bureau offer even greater promise of direct value to the farmer, particularly in aiding him to adjust production to probable demand.

It would be impossible in the time allotted to discuss all of these. A few illustrations will suffice. The pig surveys, which were started about three years ago under the direction of Secretary Wallace, and which have proved remarkably accurate, probably form the most outstanding example of the newer phases of forecasting. When prices are low, there is a strong natural tendency on the part of many farmers to reduce their breeding operations much more than they should be reduced. On the other hand, in a period of high prices there is a tendency to go too far in the other direction. The result is that we have a fairly well-defined three-to-four year hog price cycle. The pig surveys were started with a view to smoothing

out the cycle or curve and bringing about a more stabilized production of hogs.

These surveys are made twice a year, on the first of June and the first of December, and are forecasts, first, of the probable number of hogs that will be marketed the following season, and second, the probable number of sows bred or intended to be bred by farmers for the next season's crop. In other words, the June 1 survey forecasts the number of hogs that will be marketed the following autumn and winter, and indicates the number of sows bred or intended to be bred for fall litters, while the December survey forecasts the next summer's marketings, and shows the number of sows bred or intended to be bred for the following spring's litters. These reports are tabulated promptly and sent out in time to permit farmers to adjust their production in the event the report shows that too few or too many sows are being farrowed. For instance, two years ago in June, the survey showed an intention to breed an increase of 49 percent in the number of sows for fall litters. Warnings were sent out, and when the report came in, in December, it indicated that there had been an actual increase of only about 25 per cent.

One of the representatives of a large packing concern told me that during the month of July of that year the number of piggy sows which had been received at their plant had been very great, and he attributed some of this marketing to the warnings sent out by the Department of Agriculture. The survey made last December indicates that the farmers are probably going too far in the other direction, and that they are curtailing their breeding operations too much. Recommendations have been made by the Department that there be some increase in the number of sows bred to farrow next spring and fall. Indications are that there will be six to eight million less pigs born this spring than last.

It will be readily seen that for certain localities and for certain farms it may not be desirable to increase the breeding operations, particularly where it means the purchase of expensive feed to carry the hogs through, but undoubtedly there are a great many farms where an increase in hogs might be desirable. Undoubtedly, this period of low breeding will be followed by another general increase, particularly if the prices of hogs rise materially this summer. The reports should tend to prevent too great an increase. The price of corn plays an important part in the changes in hog production. Bumper corn crops in the Corn Belt in 1921 and 1922 resulted in the largest production of hogs ever known, in 1923 and 1924. Corn was cheaper than hogs, hence farmers raised more hogs. Hogs are now cheaper than corn, feed is scarce, therefore less hogs are likely to be raised in 1925. The present abundant supply of dairy products, and unsatisfactory prices, were caused largely by the relatively higher prices of dairy products during the depths of the agricultural depression.

In the case of dairying, no doubt much can be done to stabilize production, at least so far as production depends upon the number of cows. The Department has recently started a system of surveys, from which it is believed it will be possible to forecast a year or more in advance the number of dairy cows. This will be done largely from a periodic analysis of the number of heifers and calves being kept for dairy cows in relation to the number of cows of milking age. A milk production index has been started which will aid in forecasting butter and cheese production. Work has also

been started in connection with poultry, which it is believed will furnish a fairly good indication early in the winter as to the number of hens and pullets being kept for laying, and probably throw some light on what may be expected in the way of a spring egg crop.

Horses furnish another example of how statistics can be used. The price of horses and the number of horses on farms have been steadily declining. The number of colts born this year was apparently less than half the number born five years ago, and undoubtedly the average age of horses on farms is constantly increasing. The question then is, when should farmers start breeding colts? At the present time, it is cheaper to buy a horse than to raise one, but how long will that hold true? In the opinion of many people the country will some day find there is a serious shortage of horses, with a consequent sharp increase in prices, which will undoubtedly be accompanied by an increase in the use of tractors and probably later by an over-production of colts because of the over-stimulation of high prices. Additional information is now being obtained in order that the real facts may be known and given to the public.

The intention to plant reports are another very important development in crop reporting designed to bring about more orderly production. It is believed that these reports will, when they are thoroughly understood and appreciated by farmers, go far toward bringing about a proper adjustment of acreage, which of course, is basic, and must be adjusted if we are to adjust production. While it is probably true that the effect of the sun and the rain on the yield of crops cannot be accurately foretold as yet, so that it is impossible to forecast exactly what our yield per acre will be, yet the acreage as a factor of production is so important that more than half the problem is solved when a proper adjustment of acreage is made. Perhaps some of these days our meteorologists will be able to forecast the season's weather in advance for us. If that time ever comes, it will not be difficult to forecast the yield of various crops, and having information both as to intended acreage and probable yield, the forecasting of future trends will be much more simple than at present.

These intention to plant reports are issued twice a year, once in August covering winter wheat and rye, and once early in March covering spring crops, such as spring wheat, oats, barley, potatoes and tobacco. They furnish rather a clear indication of what the farmers are planning to plant. As soon as the farmers learn to use this information, whenever there is an apparent intention to change the acreage of a given crop in the wrong direction, or too far in the right direction, it should be possible to bring about a better adjustment of acreage, or at least prevent excessive planting of certain crops, the over-production of which means serious losses to the farmers. This will be done by furnishing this information, regarding intentions, promptly to the county agents and to the farmers by means of the press, the radio, and otherwise.

In its outlook report of this year, which has already been published, the Department has indicated approximately what appears to be the proper acreage to bring about a balanced production. When the intentions to plant report is issued in March, it will indicate what the farmers are planning to do, and if these plans indicate that there is danger of over-production, or under-production, of certain crops these facts will be clearly set forth in a supplemental outlook report.

A number of other illustrations might be given. There is one line of work on which very little help has yet been given to farmers, but which it is believed offers a field for real service to farmers, and that is the furnishing of information as to planting of different varieties of various fruits, such as apples, peaches, grapes, pears and citrus fruits. The planting of these fruits to the present time has been something of a gamble, and much unwise planting has been done. If the farmer had information from year to year as to the number of trees of different varieties being planted, the number of trees of different ages in orchards, as well as his present information as to total production, quantity marketed each year, and the price obtained, it would permit a much more intelligent program of fruit planting than is possible at present. If such information had been available in the past it would probably have helped to keep down the planting of peaches in the Southeastern States in the last two or three years. It would probably have prevented the planting of so many citrus trees. The Department is now developing this project.

Economists and statisticians located at Washington may be able to gather a great deal of information, and forecast with a reasonable degree of accuracy the future trend of events, but unless this information can be brought home to the individual farmers its real value to the agricultural producer is lost.

It is at this point that the State Agricultural Colleges and other agencies in the various States must be depended upon to supplement and extend the information which the Department is gathering, compiling and analyzing. Furthermore, while the Department at Washington may be able to draw certain conclusions that are correct from a national standpoint, local conditions may be such that what might be wise from a national standpoint might not be desirable from a local standpoint. Whether to increase the number of dairy cows or the planting of certain fruits are illustrations. For this reason it is highly important that every Agricultural College which has an Extension Service should have the services of a well-trained agricultural economist available, who, working with the Department at Washington on the one hand, and with the State extension forces on the other, can act as a connecting link for interpreting in the light of local conditions the facts that have been gathered. With such an advisor, the dangers of looking at a crop problem purely from a biological standpoint without giving proper weight to the market or economic aspects will be minimized, and the chances of going in the wrong direction will be greatly reduced.

A concrete example of how the Extension Service might help farmers to use statistics is the plan developed in some counties in Iowa for bringing economic facts more definitely to the farmer's attention. The Iowa County Farm Bureau is organized largely on a township basis, with township officers, President, Vice-President, Secretary and director, who represents the township on the County Board of Directors. In most counties the County Agent holds regular monthly township meetings, especially during the fall, winter, and early spring months. The program is made interesting by means of moving pictures, (portable projector attached to Ford batteries) special talks and music. In each of these township groups or clubs, one well-informed man is chosen as a regular crop reporter. In this capacity he receives "Crops and Markets" and at each monthly meeting of the township group, he has a regular part on the program. He gives the group the latest available information on the economic outlook of Agriculture — State, national, and world-wide — and leads the discussion in these matters.

Crop and livestock reports, pig surveys, and material from the "Agricultural Situation" are all helpful. The purpose of this plan is to translate the general statistical information available to the County Agent into definite recommendations for a local community. It requires careful handling on the part of the County Agent, both in choosing the right kind of man to serve as the local leader in this particular project, and in assisting these local leaders in getting available material. The translating of this information into action can be developed during the discussion at the meeting.

The Iowa Extension Department at Ames mimeographs each month a summary of economic conditions, especially as applied to Iowa, very similar in fact to "The Agricultural Situation" put out by the Department. This goes to each township director or President. It could also be sent to the local leader. Suggestions on how to handle the discussion and the basic facts and information could be included in this "State Agricultural Situation."

The success or failure of the "Outlook Project" depends primarily on the man chosen as the local project leader, as is true of most any extension project. Some will ask why the County Agent himself should not do this at each meeting. One of the fundamental purposes, or ideals of Farm Bureau and Extension work is to develop rural leadership. The right kind of economic rural leadership and straight economic thinking are essential to the future welfare of American agriculture.

It will undoubtedly be necessary in a great many cases for the County Agent to start this work and conduct it for a few times until local interest can be aroused through group discussions. The farmer with real capacity and liking for economic problems will soon be self-evident, and an Agricultural Outlook Project leader can be chosen from among those who show the greatest interest and insight. Unless the County Agent has had special training in economics it will be better to try this plan out in only one or two clubs at a time.

It has been very gratifying to note the general change which is taking place in the programs of the Extension Service in the various States. It is particularly interesting to note that economic problems are gradually occupying a larger place on such programs. This is as it should be. Until recently it would not have been practicable because while there has always been in Washington a vast quantity of agricultural statistics in the raw state, but little had been done to make the information available in such form as to permit the formulation of an intelligent program for production. But with the ever-increasing volume of statistics which are being accumulated and brought together in usable form, not only for this country but for foreign countries, the Bureau of Agricultural Economics, with its large staff of trained economists and statisticians, is now able to furnish to the Agricultural Colleges and the State Extension Departments an ever-increasing amount of carefully prepared statistical and economic data.

The problem of making practical use of the information to the end that our whole agricultural program may be developed along sound economic lines lies very largely in the hands of the Extension Service.

